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# **Megacity Transitions in the Adaptation-Development Nexus: Transformation and Resilience in the Urban Coast, Special Issue Editorial**

**Mark Pelling<sup>1</sup>**

## **Introduction**

Given rapid urban change and the emergence of city scale extremes in climate change impact, how fit for purpose are the dominant narratives, institutional and organisational configurations of adaptation in coastal megacities? Indeed what should the purpose of urban adaptation be? The Sustainable Development Goals challenge all development activity, including urban risk management and climate change adaptation to be part of the solution for poverty eradication, inclusive and responsive governance, justice, improved access to basic needs and services, enhanced equity considerations and environmental integrity (Satterthwaite 2014). Urbanists frequently describe cities as the pivotal places where sustainable development will be won or lost (Solecki et al. 2015). But, are contemporary urban climate change adaptation and disaster risk management regimes able to rebalance between protecting, adjusting and fundamentally changing development pathways in support of a more sustainable development?

The papers in this special issue ask these questions of five megacities: Kolkata, Lagos, London, New York and Tokyo. Using common methodologies deployed within a Belmont Forum project, Transformation and Resilience on Urban Coasts (TRUC)<sup>2</sup>, the perspectives of urban planners and citizens at risk are contrasted with expected trajectories for risk management and development shaped by city and national political and administrative processes. While the governance contexts within which adaptation and development coevolve varied between the megacity cases, findings showed all cities were challenged by a gap between political vision and the strategic steering of adaptation, and technical judgement and capacity. Limited technical and professional input into strategic pathway setting for adaptation in the medium and long-term is a challenge for city technicians and for researchers aiming for impact policy processes through coproduction.

## **The adaptation-development nexus**

At the heart of our concern lies what we defined as the adaptation-development nexus. This describes the relationship between the vision, policy and practice of climate change adaptation and that of urban development. As social processes, adaptation and development are perceived according to the viewpoint of the observer. Individual acts will be valued differently with winners and losers produced by every action. Building consensus on the desired relationship between adaptation and development may not be easy and might be forced, perhaps worst is the silent emergence of an adaptation-development nexus without scrutiny

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<sup>2</sup> See [www.bel-truc.org](http://www.bel-truc.org)

and reflection. The growing literature on adaptation as political and value filled (Pelling 2011; Carter et al 2015) helps to reveal parallels with development and challenge researchers and planners to better articulate whose values, visions and preferences orient adaptation, development and the adaptation-development nexus.

The papers presented here analyze city risk management regimes and their relationships with development through four states, discussed in detail in Solecki et al (2017). Collapse describes regimes with no strategic capacity to act on risk; resistance describes regimes where risk management is used to protect existing development; resilience describes contexts where development is encouraged to be flexible and accept some losses at the margins to enable overall persistence; transformation describes efforts to reduce risk through fundamental changes to aspects of development. There are no *a priori* ethical or normative assumptions on regime outcomes for procedural or distributive justice. While describing regime states is helpful for diagnosing policy, the focus of this special issue is on transition between states. If cities are to play their role in meeting the Sustainable Development Goals in the contexts of rapid urban and environmental change then transition to new orientations in the adaptation-development nexus are likely to be needed. Transition from collapse through resistance, resilience to transformation opens policy options, but also increasingly challenges development to be the site of change for risk reduction.

Work reported on in this special issue also shares a common methodological approach. This aimed at providing opportunities for stakeholders to reflect on practices and how far their professional roles allowed them to act in the best interests of sustainable development for the city. Individual interviews and workshops proved these opportunities. At the city level biophysical and social vulnerability (Welle and Birkmann 2016a) assessment included participatory scenario workshops used to describe current, preferred and potential future relationships between development and risk management that would shape options and outcomes for adaptation. Individual expert interviews with city level stakeholders helped explain why preferred states were difficult to obtain and rarely expected in the future in Kolkata (Rajeev 2016), Lagos (Ajibade et al 2016), London (Pelling et al 2016), New York (Solecki et al 2016) and Tokyo (Nishi et al 2016). Expected future states were often further from the preferred state than the current. Expert interviews were joined by household surveys conducted in high risk communities in Kolkata (Narayanan 2016), Lagos (Welle and Birkmann, 2016b) and New York (Solecki et al. 2016). The household survey results provided a comparative analysis of the conditions of climate risk and understanding of city level risk management in each city.

### **Megacities at a cross-roads**

The central finding of the research is that coastal megacities, and so potentially other cities, are at a major development cross-roads. Reported development trends and linked adaptation pathways produce current and likely future orientations in the relationship between risk management and development that are not preferred by resilience, risk management and urban development professionals. This cross-road has three expressions:

First, urban policy: whether governments will maintain and stabilize their role as mediators and enablers of equitable development and risk reduction – or whether there will be a transition towards more individualized responsibilities. Movement from mediation to individual responsibility was already felt in all cities. Individualisation was most threatening to participants in Lagos and Kolkata where planners felt their limited authority likely to be reduced further. In Tokyo, London and New York individual responsibility was already accepted as part of a mixture of policy options, though declining government responsibility was a concern. Projected future scenarios generated increased inequality in the social and spatial distribution of vulnerability, and declines in the capacity to generate collaborative and mutual aid focused disaster risk reduction strategies.

Second, risk perception and policy. In all city cases experts felt that while planning, legislation and investment was reasonably well oriented towards historic hazards (including earthquake in Tokyo) none had kept pace with the emerging flood, storm surge and especially heatwave hazards posed by climate change. Most difficult was heatwave hazard, with existing science-policy networks and physical infrastructure based risk management strategies unable to capture the social determinants of vulnerability and to programme as effectively as they might for heatwave risk reduction through social care policy.

Third, relationships between science, policy and political actors. City level political leadership was needed for transition, indicating a degree of autonomy from national actors. But city level political leadership was not always accessible to scientific actors. While technical staff was accessible these actors often had limited degrees of movement to adjust policy, and were mainly concerned with improving the delivery of existing goals. In some cities technical staff found it very difficult to suggest innovation to seniors contributing to the distance between preferred and actual adaptation pathways. Most importantly, the TRUC coproduced research process helped to reveal the frequently incomplete policy space of adaptation and to present and discuss potential for opening space for more resilient or transformative adaptation. This became an important follow-on issue of discussion for city stakeholders.

Across cities differences in wealth, stability of governance and access to technology influenced sensitivity and coping capacity. These were lower in Lagos and Kolkata than in New York, London and Tokyo. In all cities limited adaptive capacity suggests opportunities for building resilience through support for medium- long-term planning. The role of government as a mediator of risk and a champion for the most vulnerable was stressed in all cities. However, the question whether governments at the national and city level deliver in this regard was highly contested.

The centrality of science-policy-politics relationships, the mechanisms through which science was entrained into policy processes, and that it was difficult to reach political influence were anticipated but the degree of separation was greater than expected. Scientific knowledge was often held apart from the political process. These findings point to patterns of global relevance and wider concerns about loss of public trust in science, especially around complex problems like climate change (Hulme 2009) and GM crops (Clancey 2017).

### **Engaging with policy processes**

City stakeholder events were held in each city to frame research questions. These were full-day workshops with participants including local and city government with some national government line ministry, private sector and charity sector involvement. The workshops served to introduce TRUC to stakeholders who undertook a participatory scenario exercise. The scenario exercise asked participants to identify a fundamental development trend in the city and then to explore how this trend might manifest under adaptive and mal-adaptive policy contexts. This was a very concrete way in which stakeholders were able to influence research questions and analysis. Workshop outputs fed into the design of expert survey interviews and the analysis of the coupled biophysical-vulnerability assessment model. Both processes provided scope for follow-up and to maintain relationships between researchers and stakeholder over the life of the project. In Kolkata, Lagos and New York household surveys of risk perception and management provided opportunities for one-to-one conversations with local residents in at risk neighbourhoods of each city.

In cities where local researchers and local stakeholders already had strong relationships or where institutions existed to support these relationships (such as the London Climate Change Partnership) coproduction worked well. More challenging was to extend a coproduction model into other cultural and development contexts. Arguably it is these contexts where coproduction is most important. Coproduction is easier when policy processes are underway, this requires both good local knowledge and scope for research flexibility. This was the case in New York City where work fed into the New York City Panel on Climate Change and the Climate Change Risk in the Urban Northeast (CCRUN) project in the Philadelphia to Boston region. In addition, the Tokyo team collaborated with the RISE consortium of private and public sector corporate actors (<http://www.preventionweb.net/rise/>). This partnership increased the profile of the research and helped communicate its core narratives to policy actors. In Tokyo there was a slowness in the integration of climate change risk and especially heatwave risk planning into policy. Also, very limited inclusion of social policy, - including care for the elderly,, in heatwave risk management which continued to be framed around management of physical structures and medical response. In London two meetings at City Hall, convened by the London Climate Change Partnership opened a dialogue on transition pathways and the ways in which technical agencies might better communicate concern to political actors in London and Whitehall.

### **Conclusions**

Having opened spaces for reflexive dialogue and scrutinized decision-making in each city from a wide lens – detailed sectoral analysis and city to community-level comparative analysis of transition would help gain better understanding of constraints and improve scope for city level action. These lessons are especially important given the emphasis on city resilience in the Sustainable Development Goals and other emerging international agreements including the New Urban Agenda (McPhearson et al 2016). Scope for an international conversation between city stakeholders and scientists, with international actors such as C40 and Rockefeller Foundation would add particular value to the work so far completed. This analysis also would

be invaluable to address the widening tension emerging between city stakeholders and planning efforts, and community stakeholders and local neighborhood interests.

Whilst TRUC targeted the underlying paradigms of risk management, the stakeholders in the city often felt a need to talk about concrete adaptation projects. In a next step, both levels would need to be integrated more coherently in order to increase the practical relevance of research. The focus on the larger underlying risk management paradigms should not be lost in this endeavor – as it was precisely one of the objectives of TRUC to step back from the nitty-gritty of individual adaptation measures and provide spaces to reflect on the larger, often implicit, notions of risk reduction and adaptation. However, after having done so, further research could usefully improve understanding of how different risk management regimes can be matched with the choices for or against actual adaptation measures (e.g. retreat vs. in-situ transformation of most exposed neighborhoods).

The papers presented here provide significant knowledge on the tensions between urban development pressures and climate adaptation, and the transitions in risk management that could take place in megacities. Collectively, the papers reveal the need and conditions for risk management transitions pathways – from resistance to resilience and potentially to transformation. Follow-on coproduced action could usefully develop appropriate tools and strategies to help in this process so that transition is steered as an inclusive and equitable process for the future city.

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